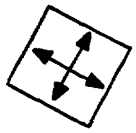
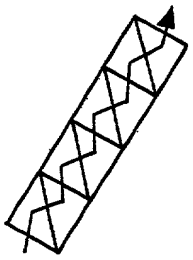
FOR TRIANGLE, ELECTRIC CURRENTS ARE CALCULATED FROM VERTEXES TO OPPOSITE SIDE DIRECTIONS



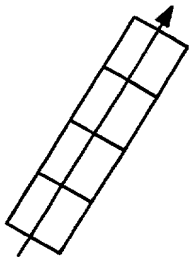
FOR QUADRILATERAL, ELECTRIC CURRENTS IN OPPOSITE SIDE DIRECTIONS ARE CALCULATED

FIG. 1 PRIOR ART



FOR TRIANGLE, ELECTRIC CURRENT FLOWS UNEVENLY, AND PROPAGATION DELAY OCCURS
(ANALYSIS ACCURACY : LOW)

FIG. 2A PRIOR ART



FOR QUADRILATERAL, ELECTRIC CURRENT SMOOTHLY FLOWS
(ANALYSIS ACCURACY : HIGH)

FIG. 2B PRIOR ART

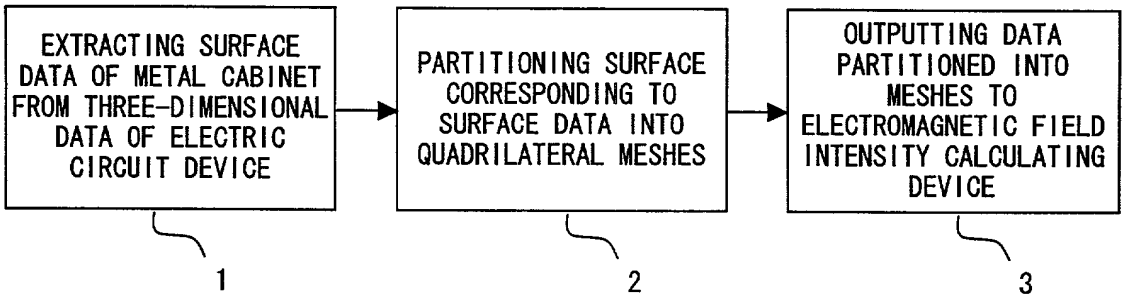


FIG. 3

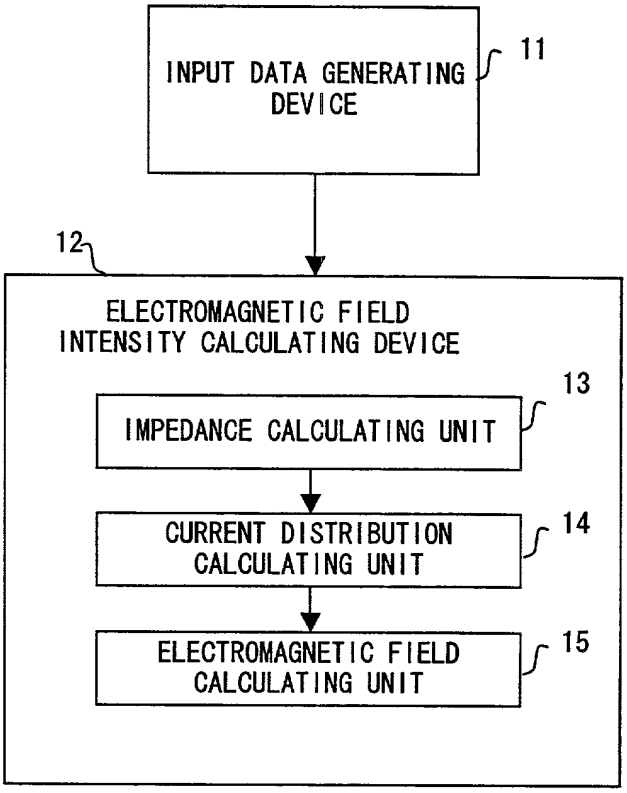

INPUT DATA GENERATING DEVICE
11
12
ELECTROMAGNETIC FIELD INTENSITY CALCULATING DEVICE
13
IMPEDANCE CALCULATING UNIT
14
CURRENT DISTRIBUTION CALCULATING UNIT
15
ELECTROMAGNETIC FIELD CALCULATING UNIT

FIG. 4

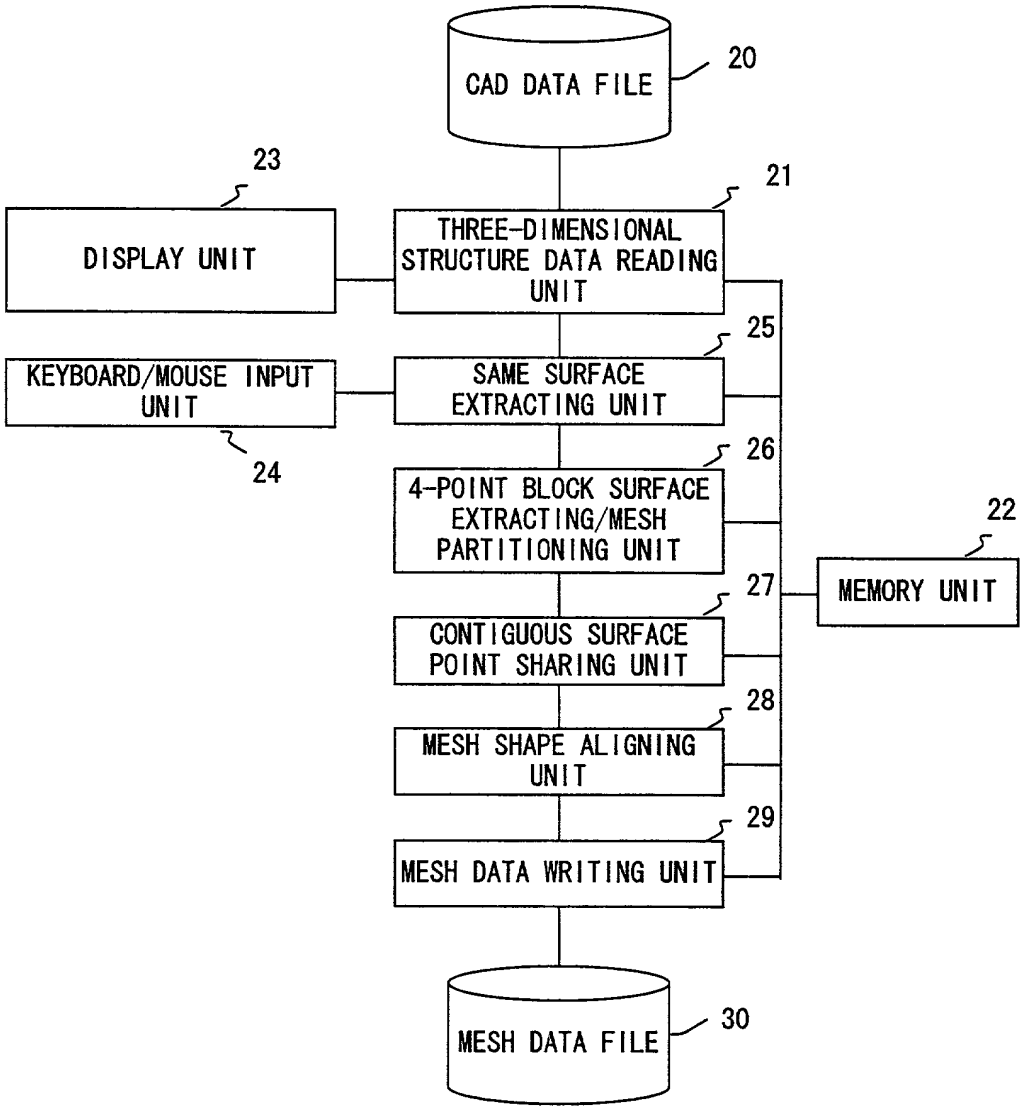

CAD DATA FILE
20
23
21
DISPLAY UNIT
THREE-DIMENSIONAL STRUCTURE DATA READING UNIT
25
KEYBOARD/MOUSE INPUT UNIT
SAME SURFACE EXTRACTING UNIT
24
26
4-POINT BLOCK SURFACE EXTRACTING/MESH PARTITIONING UNIT
22
MEMORY UNIT
27
CONTIGUOUS SURFACE POINT SHARING UNIT
28
MESH SHAPE ALIGNING UNIT
29
MESH DATA WRITING UNIT
MESH DATA FILE
30

FIG. 5

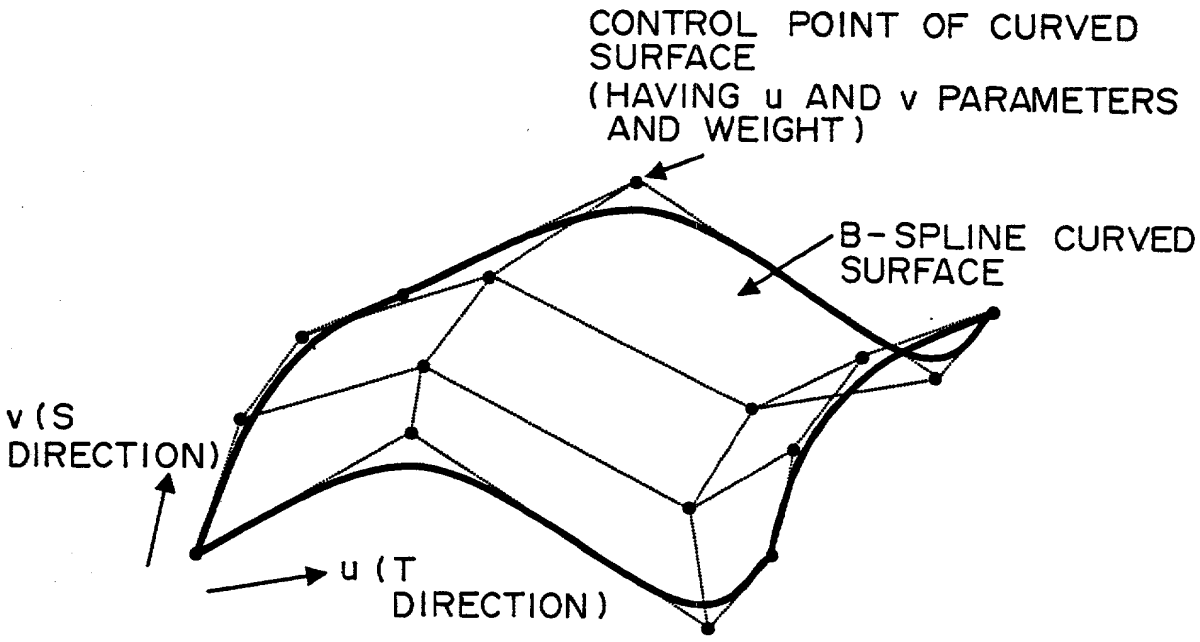

CONTROL POINT OF CURVED SURFACE
(HAVING u AND v PARAMETERS AND WEIGHT)
B-SPLINE CURVED SURFACE
v (S DIRECTION)
u (T DIRECTION)

FIG. 6

NAME	SUMMARY
ENTITY ID	SURFACE NUMBER OF B-SPLINE CURVED SURFACE
K1	SUPERSCRIPT OF TOTAL SUM SYMBOL IN S DIRECTION
K2	SUPERSCRIPT OF TOTAL SUM SYMBOL IN T DIRECTION
M1	ORDER OF BASE FUNCTION
M2	ORDER OF BASE FUNCTION
PROP1	PARAMETER 1 INDICATING STATE OF CURVED SURFACE
PROP2	PARAMETER 2 INDICATING STATE OF CURVED SURFACE
PROP3	PARAMETER 3 INDICATING STATE OF CURVED SURFACE
PROP4	PARAMETER 4 INDICATING STATE OF CURVED SURFACE
PROP5	PARAMETER 5 INDICATING STATE OF CURVED SURFACE
S(-M1)	NOT SEQUENCE VALUE IN S DIRECTION
～	
T(-M2)	NOT SEQUENCE VALUE IN T DIRECTION
～	
W(0,0)	WEIGHT
～	
X(0,0)	SPATIAL COORDINATE VALUE OF EACH CONTROL POINT(X)
Y(0,0)	SPATIAL COORDINATE VALUE OF EACH CONTROL POINT(Y)
Z(0,0)	SPATIAL COORDINATE VALUE OF EACH CONTROL POINT(Z)
～	
U(0)	START VALUE IN S DIRECTION
U(1)	END VALUE IN S DIRECTION
V(0)	START VALUE IN T DIRECTION
V(1)	END VALUE IN T DIRECTION

FIG. 7

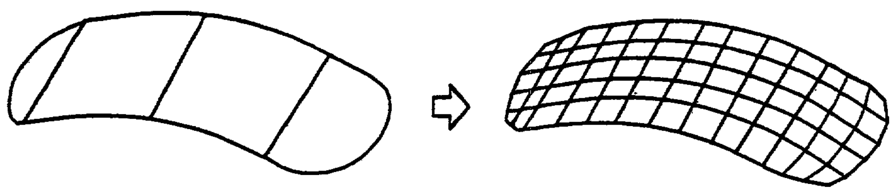


FIG. 8

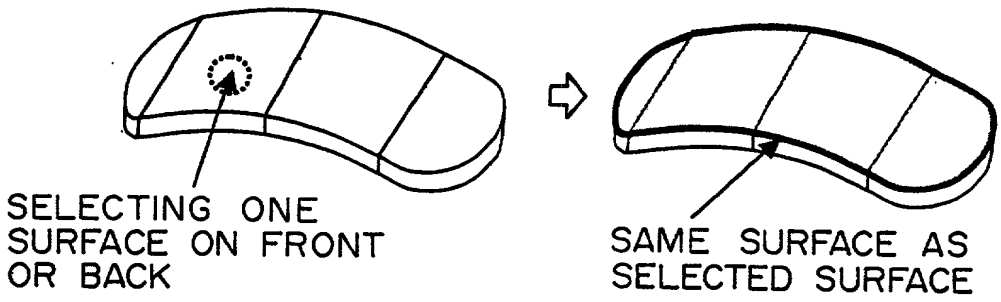

SELECTING ONE
SURFACE ON FRONT
OR BACK
SAME SURFACE AS
SELECTED SURFACE

FIG. 9

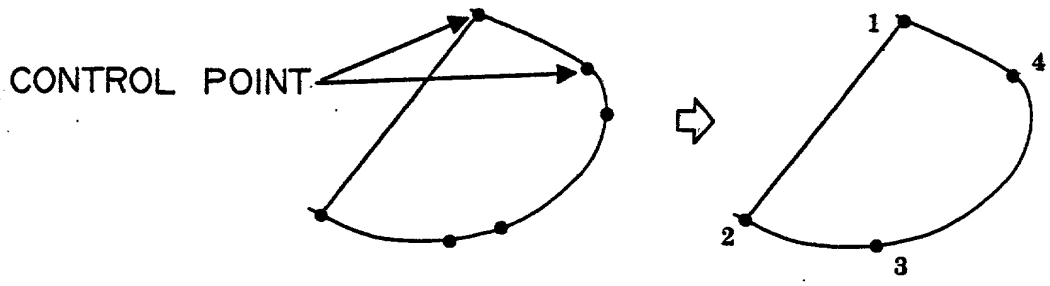


FIG. 10

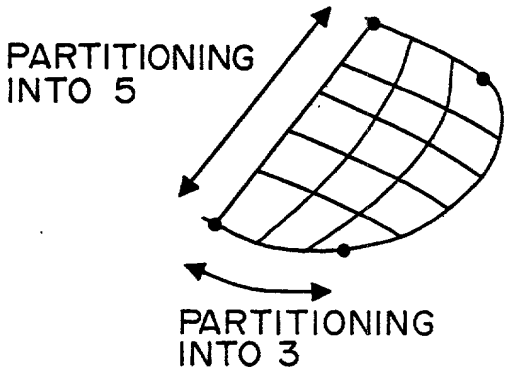


FIG. 11

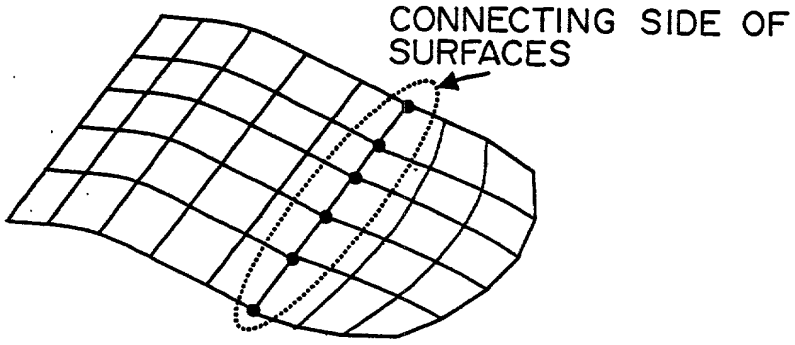


FIG. 12

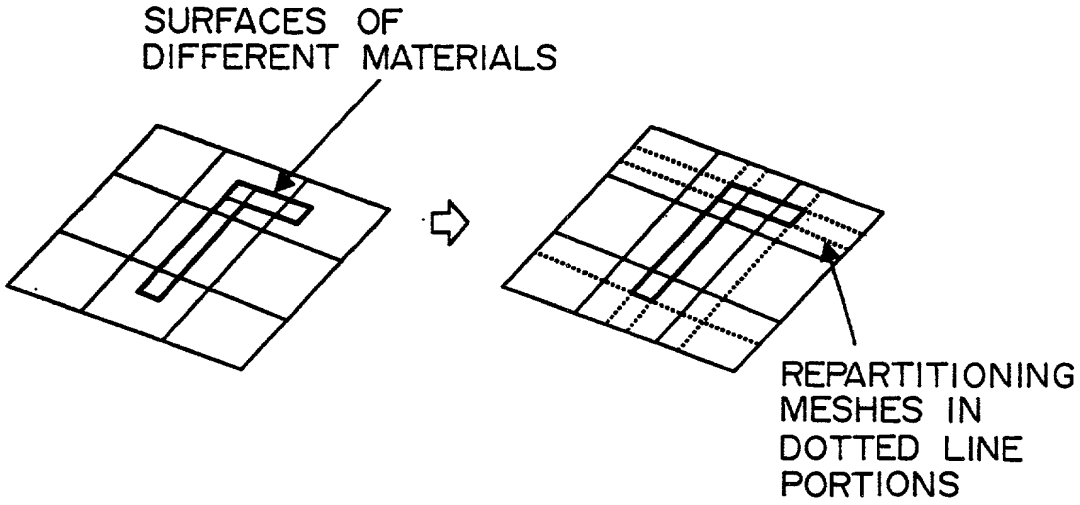


FIG. 13

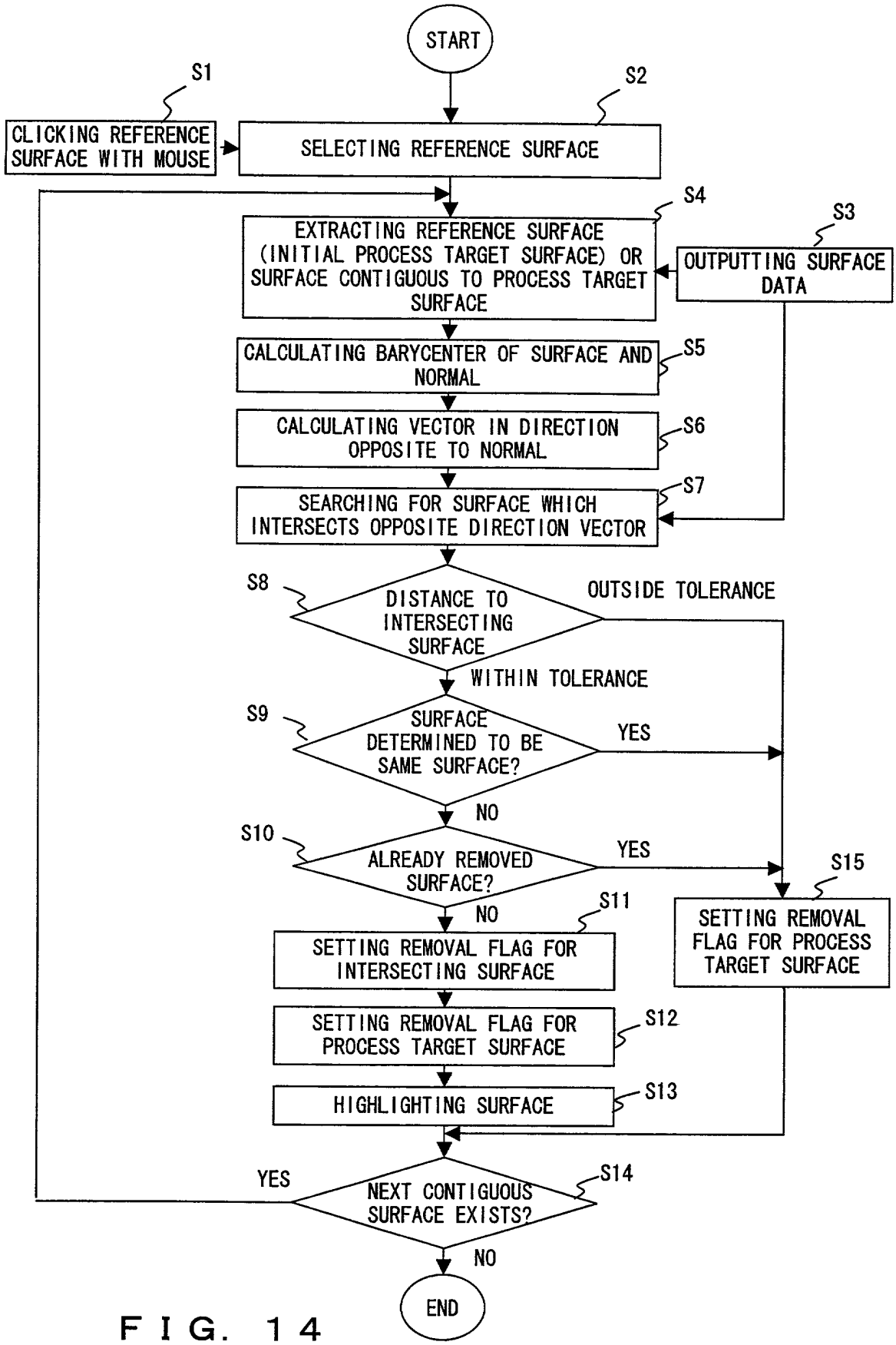


FIG. 14

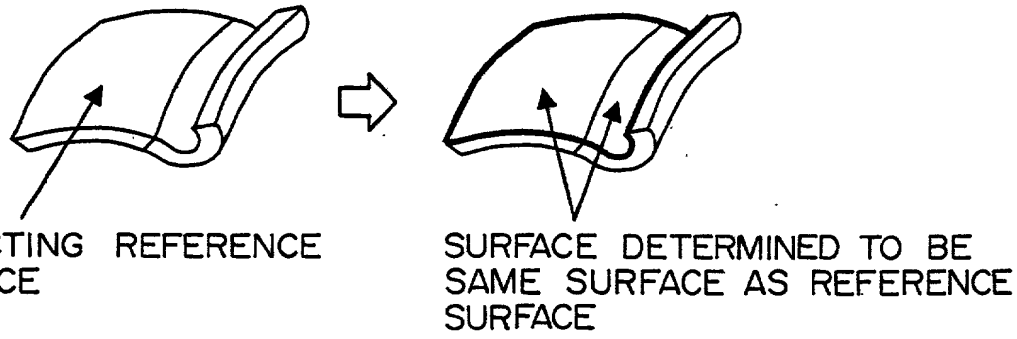


FIG. 15

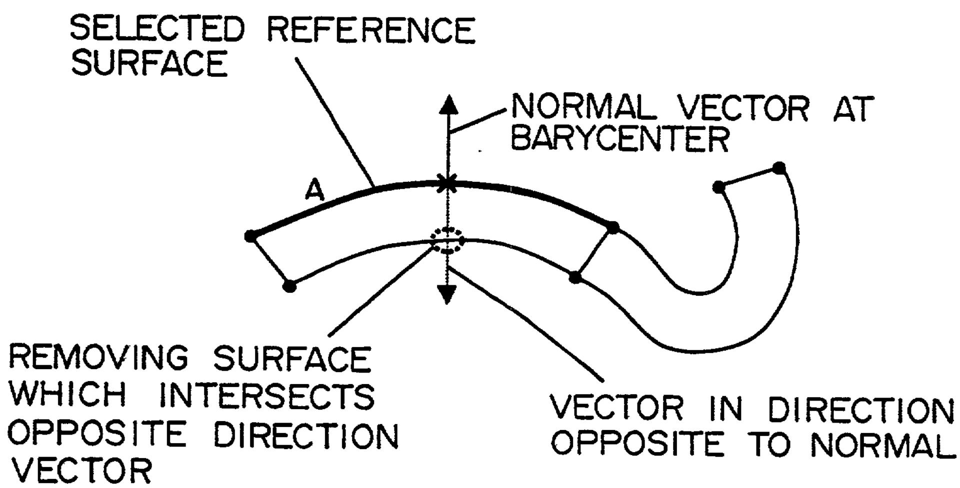

SELECTED REFERENCE SURFACE
NORMAL VECTOR AT BARYCENTER
A
REMOVING SURFACE WHICH INTERSECTS OPPOSITE DIRECTION VECTOR
VECTOR IN DIRECTION OPPOSITE TO NORMAL

FIG. 16

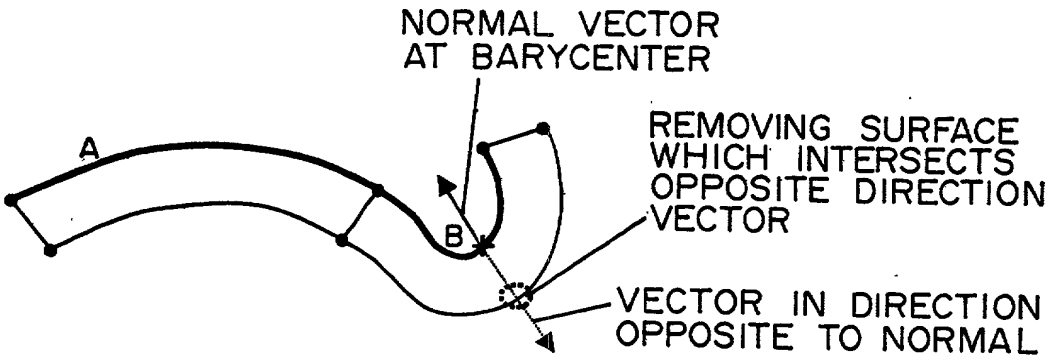


FIG. 17

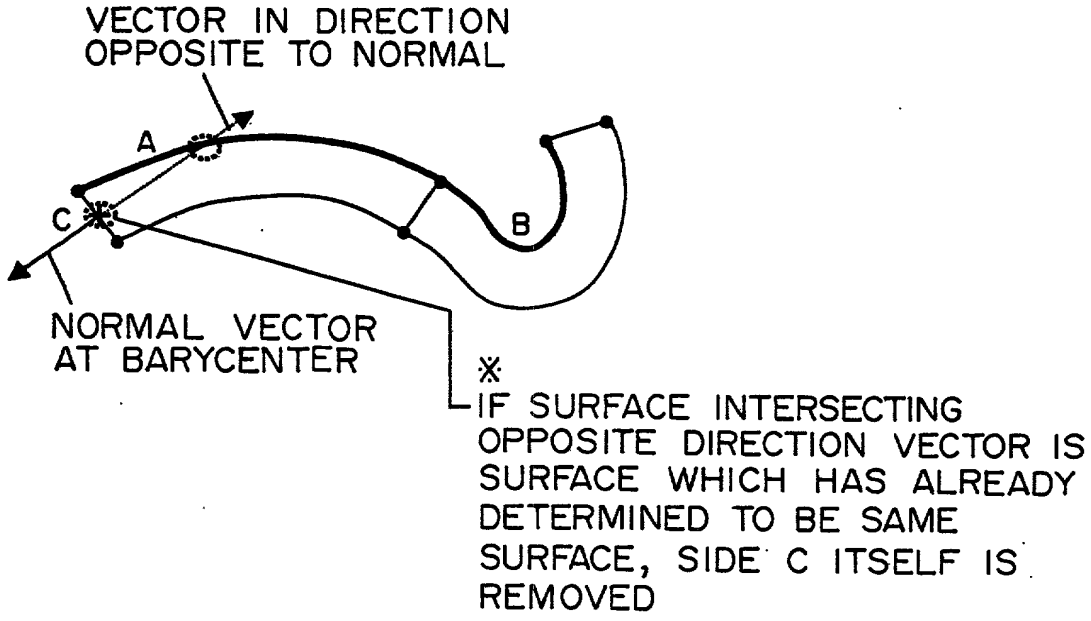


FIG. 18

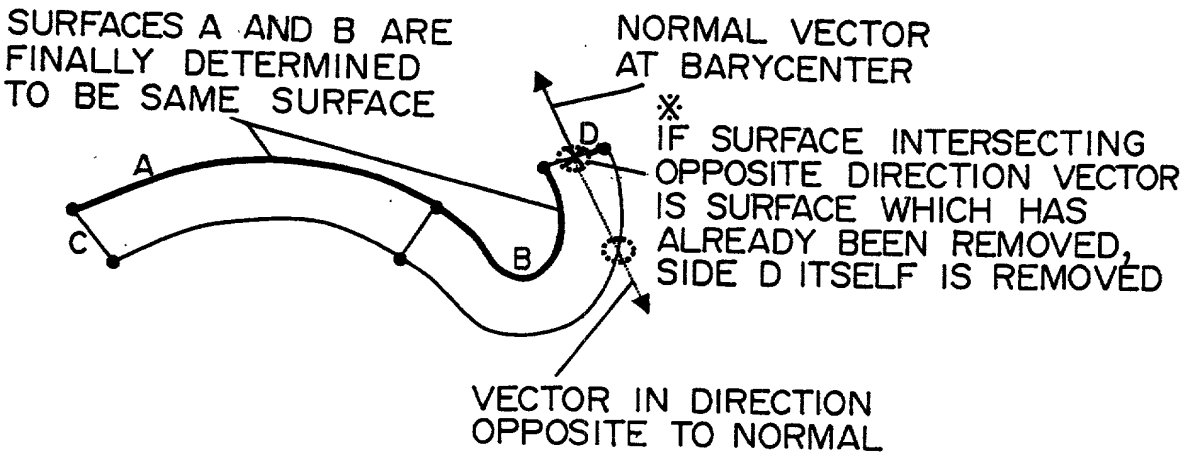


FIG. 19

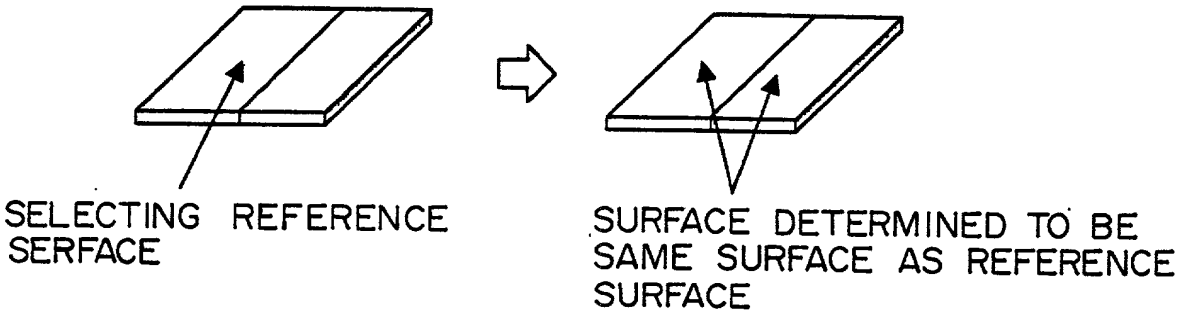

SELECTING REFERENCE SERFACE
SURFACE DETERMINED TO BE SAME SURFACE AS REFERENCE SURFACE

FIG. 20

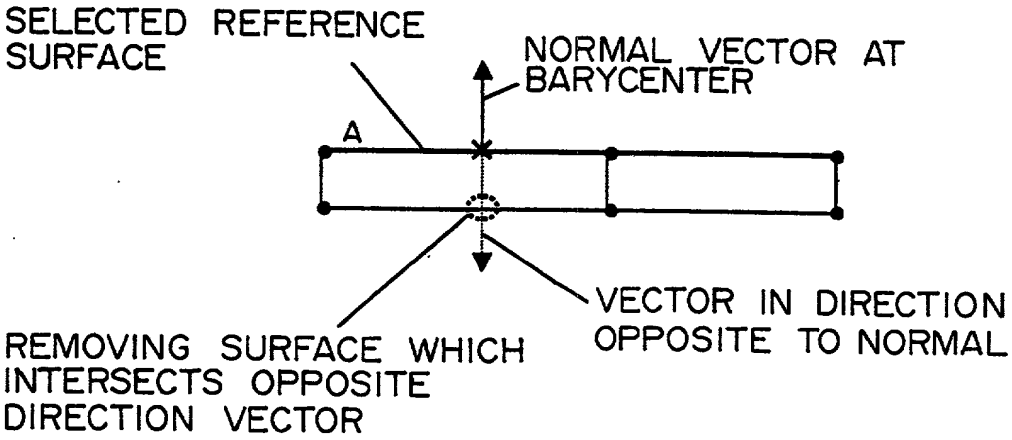

SELECTED REFERENCE SURFACE
NORMAL VECTOR AT BARYCENTER
A
VECTOR IN DIRECTION OPPOSITE TO NORMAL
REMOVING SURFACE WHICH INTERSECTS OPPOSITE DIRECTION VECTOR

FIG. 21

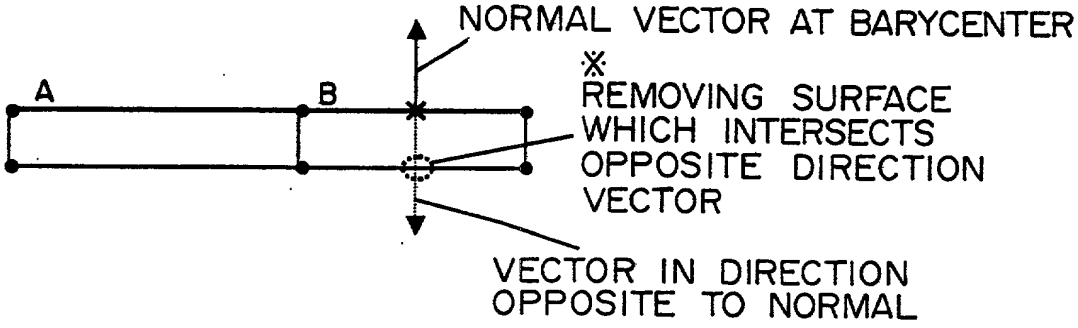

NORMAL VECTOR AT BARYCENTER
※
REMOVING SURFACE WHICH INTERSECTS OPPOSITE DIRECTION VECTOR
A
B
VECTOR IN DIRECTION OPPOSITE TO NORMAL

FIG. 22

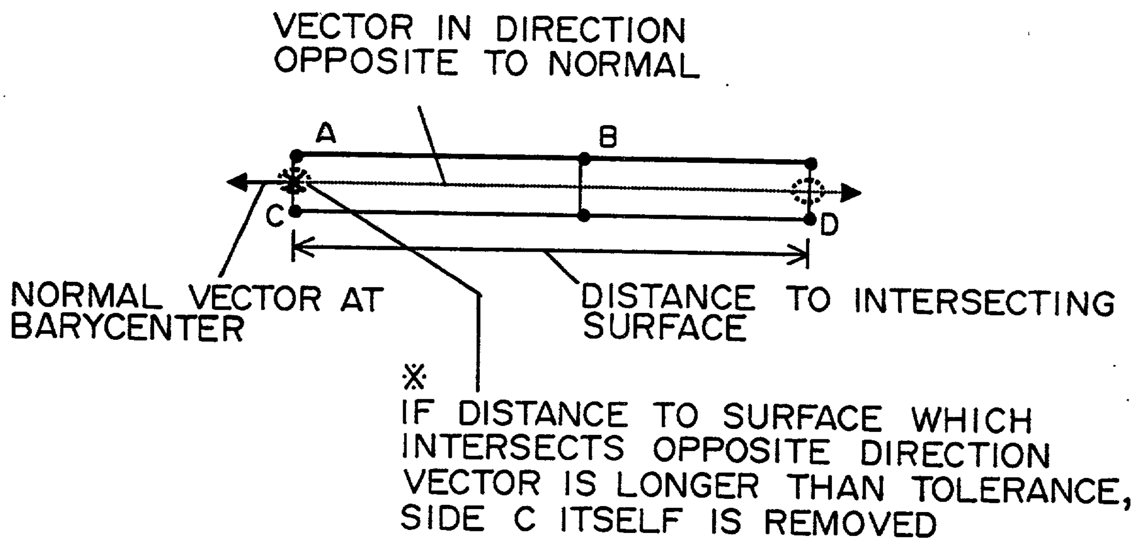

VECTOR IN DIRECTION OPPOSITE TO NORMAL
A
B
C
D
NORMAL VECTOR AT BARYCENTER
DISTANCE TO INTERSECTING SURFACE
※
IF DISTANCE TO SURFACE WHICH INTERSECTS OPPOSITE DIRECTION VECTOR IS LONGER THAN TOLERANCE, SIDE C ITSELF IS REMOVED

FIG. 23

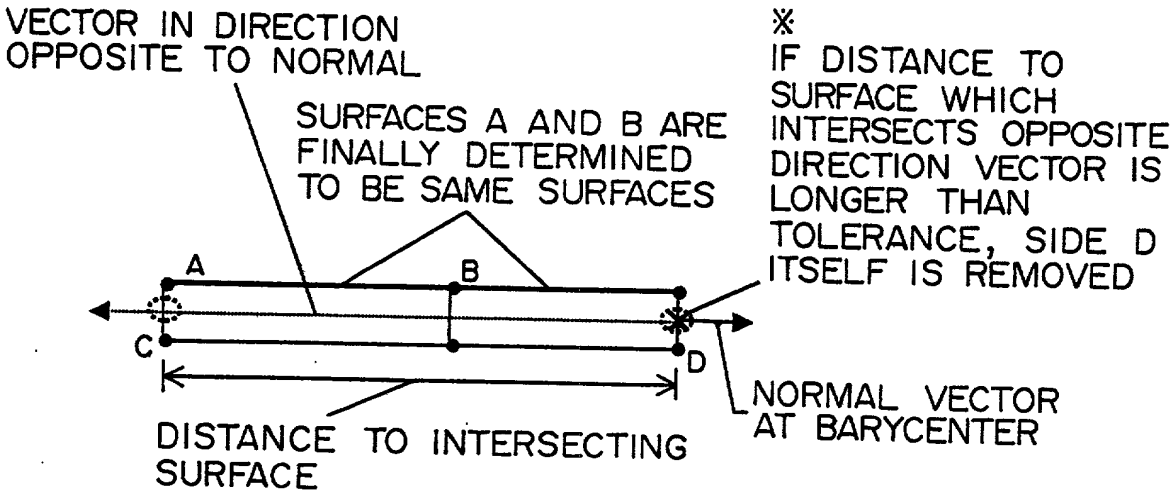

VECTOR IN DIRECTION OPPOSITE TO NORMAL
SURFACES A AND B ARE FINALLY DETERMINED TO BE SAME SURFACES
※
IF DISTANCE TO SURFACE WHICH INTERSECTS OPPOSITE DIRECTION VECTOR IS LONGER THAN TOLERANCE, SIDE D ITSELF IS REMOVED
A
B
C
D
NORMAL VECTOR AT BARYCENTER
DISTANCE TO INTERSECTING SURFACE

FIG. 24

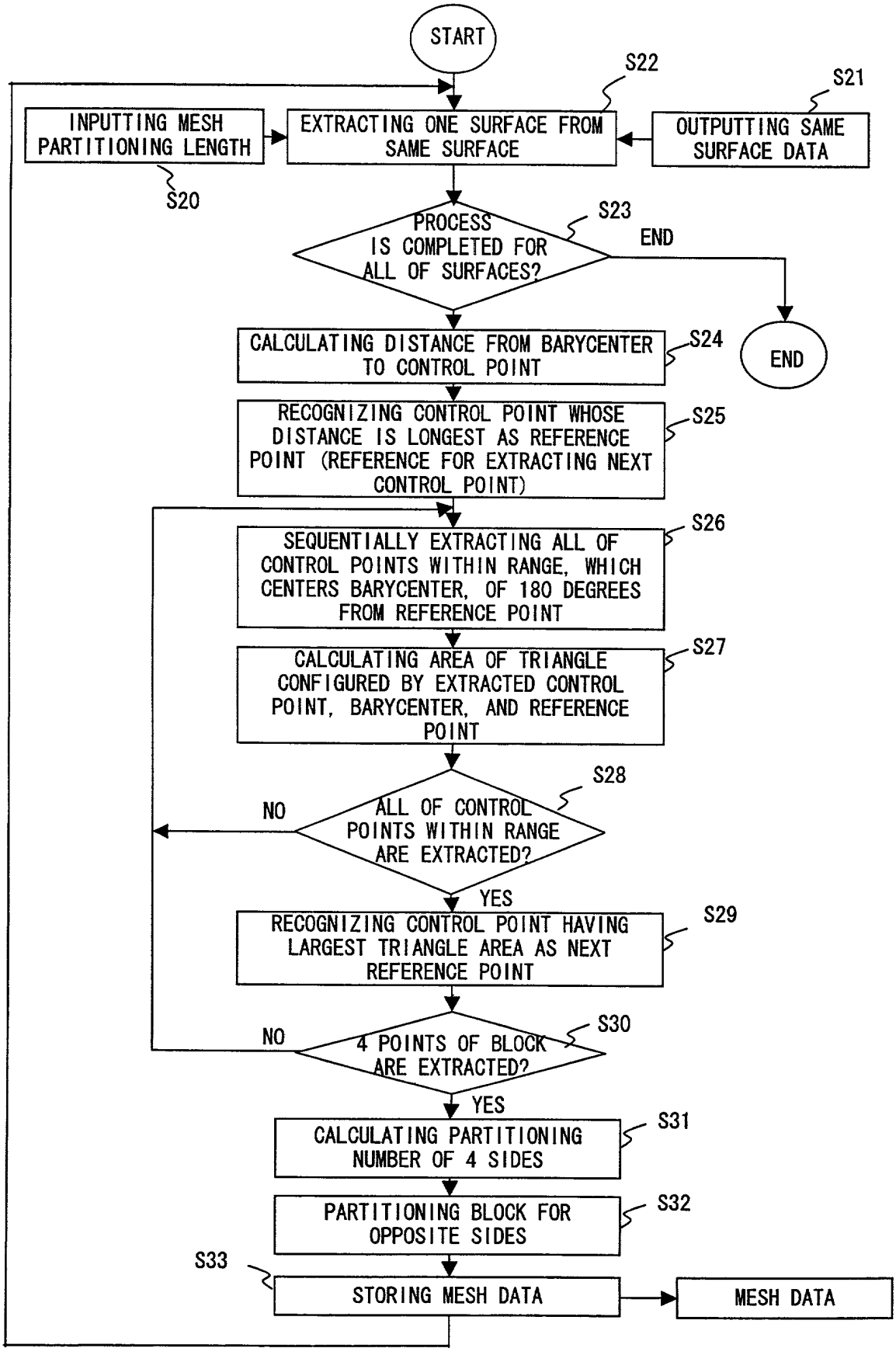


FIG. 25

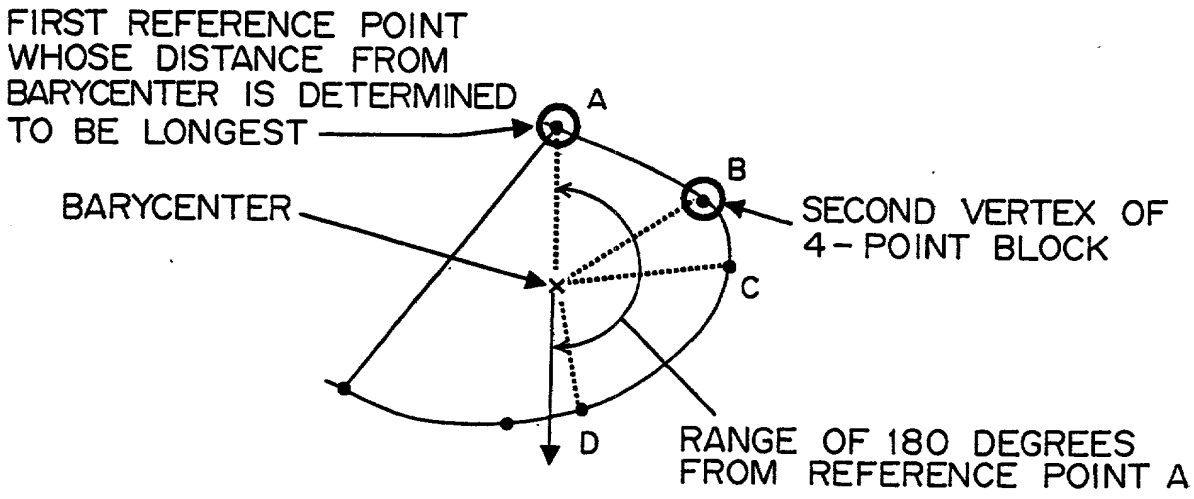

FIRST REFERENCE POINT
WHOSE DISTANCE FROM
BARYCENTER IS DETERMINED
TO BE LONGEST
A
B
BARYCENTER
SECOND VERTEX OF
4-POINT BLOCK
C
D
RANGE OF 180 DEGREES
FROM REFERENCE POINT A

FIG. 26

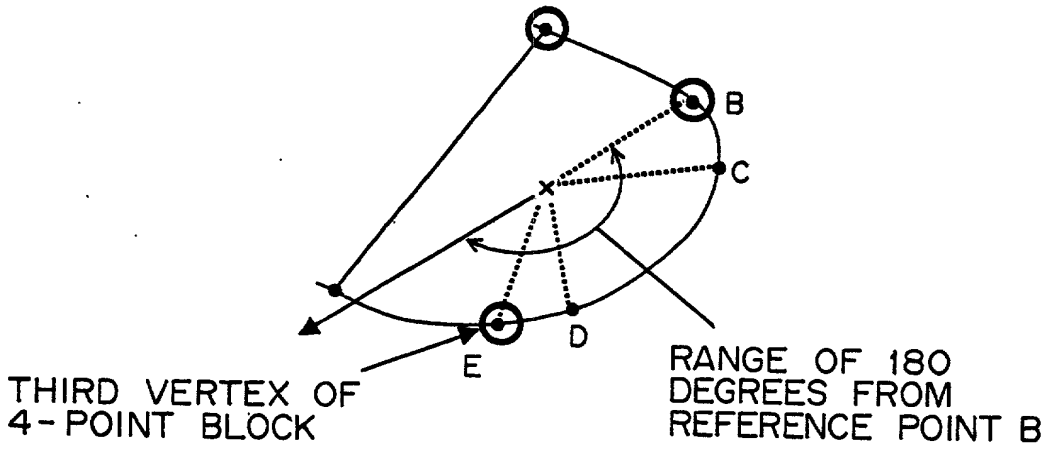


FIG. 27

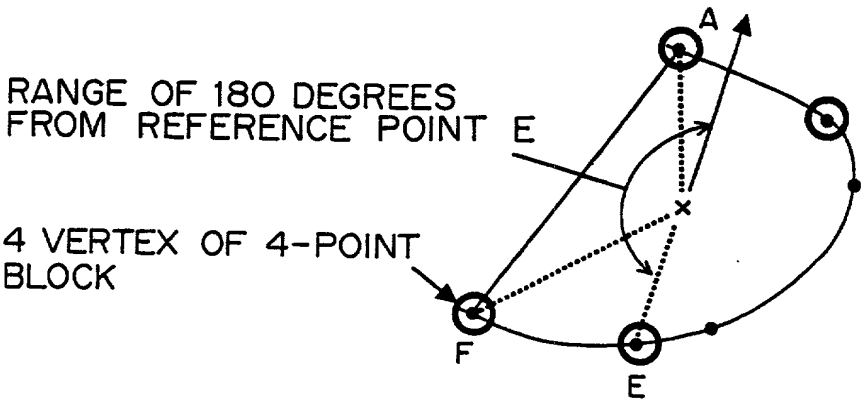


FIG. 28

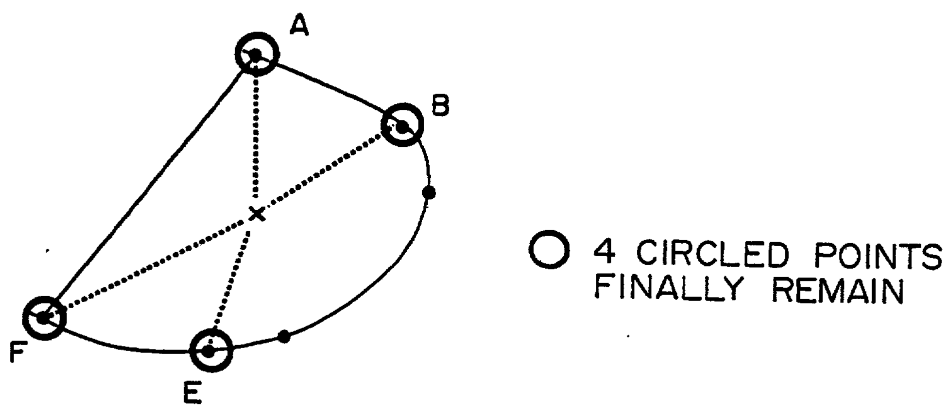


FIG. 29

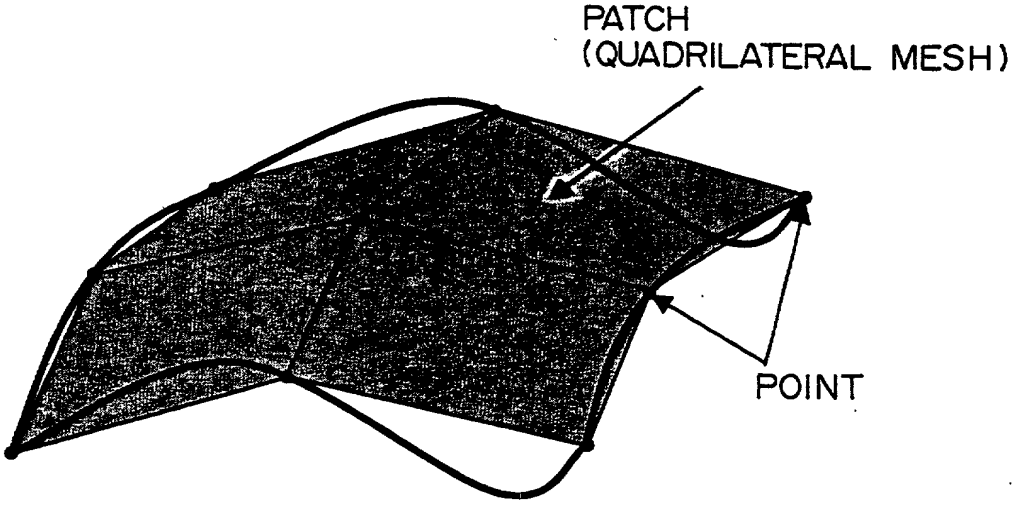


FIG. 30

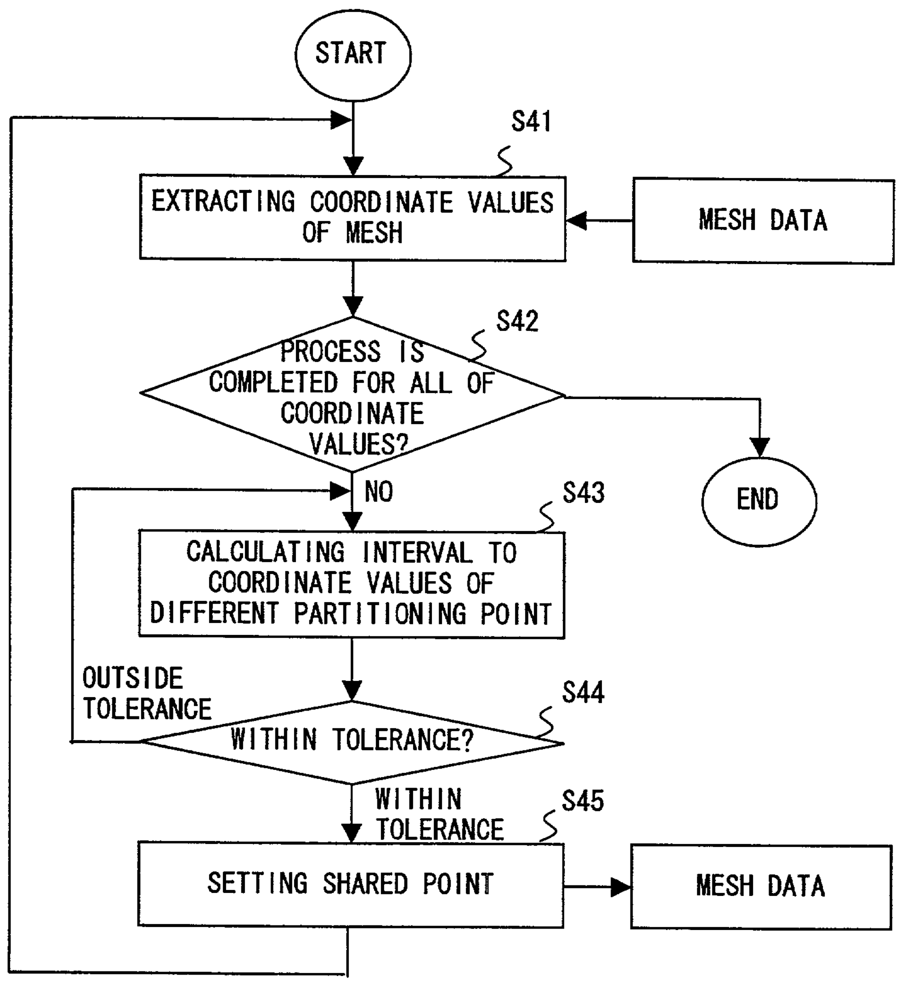
COORDINATE SPECIFICATION DATA OF POLYGON VERTEX: $point

```
<KEYWORD・STATEMENT>
      $point
<DATA・STATEMENT>
     Point no.   POINT NUMBER
     X           X COORDINATE VALUE
     Y           Y COORDINATE VALUE
     Z           Z COORDINATE VALUE
<DESCRIPTION EXAMPLE>
      $point
      1    0.035  0.012  0.8
```

SPECIFICATION DATA OF POLYGON CONFIGURING POINT: $patch

```
<KEYWORD・STATEMENT>
      $patch
<DATA・STATEMENT>
     Patch no.   PATCH NUMBER
     Point 1     POINT NUMBER WHICH BECOMES FIRST CONFIGURING POINT OF PATCH
     Point 2     POINT NUMBER WHICH BECOMES SECOND CONFIGURING POINT OF PATCH
     Point 3     POINT NUMBER WHICH BECOMES THIRD CONFIGURING POINT OF PATCH
     Point 4     POINT NUMBER WHICH BECOMES FOURTH CONFIGURING POINT OF PATCH
<DESCRIPTION EXAMPLE>
      $patch
      1   10    11    12    13
```

FIG. 31


START
S41
EXTRACTING COORDINATE VALUES OF MESH
MESH DATA
S42
PROCESS IS COMPLETED FOR ALL OF COORDINATE VALUES?
END
NO
S43
CALCULATING INTERVAL TO COORDINATE VALUES OF DIFFERENT PARTITIONING POINT
OUTSIDE TOLERANCE
S44
WITHIN TOLERANCE?
WITHIN TOLERANCE
S45
SETTING SHARED POINT
MESH DATA

F I G. 3 2

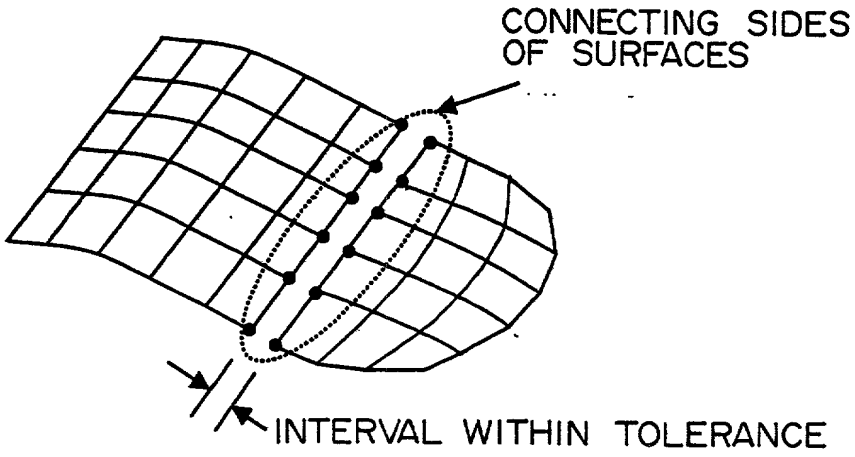
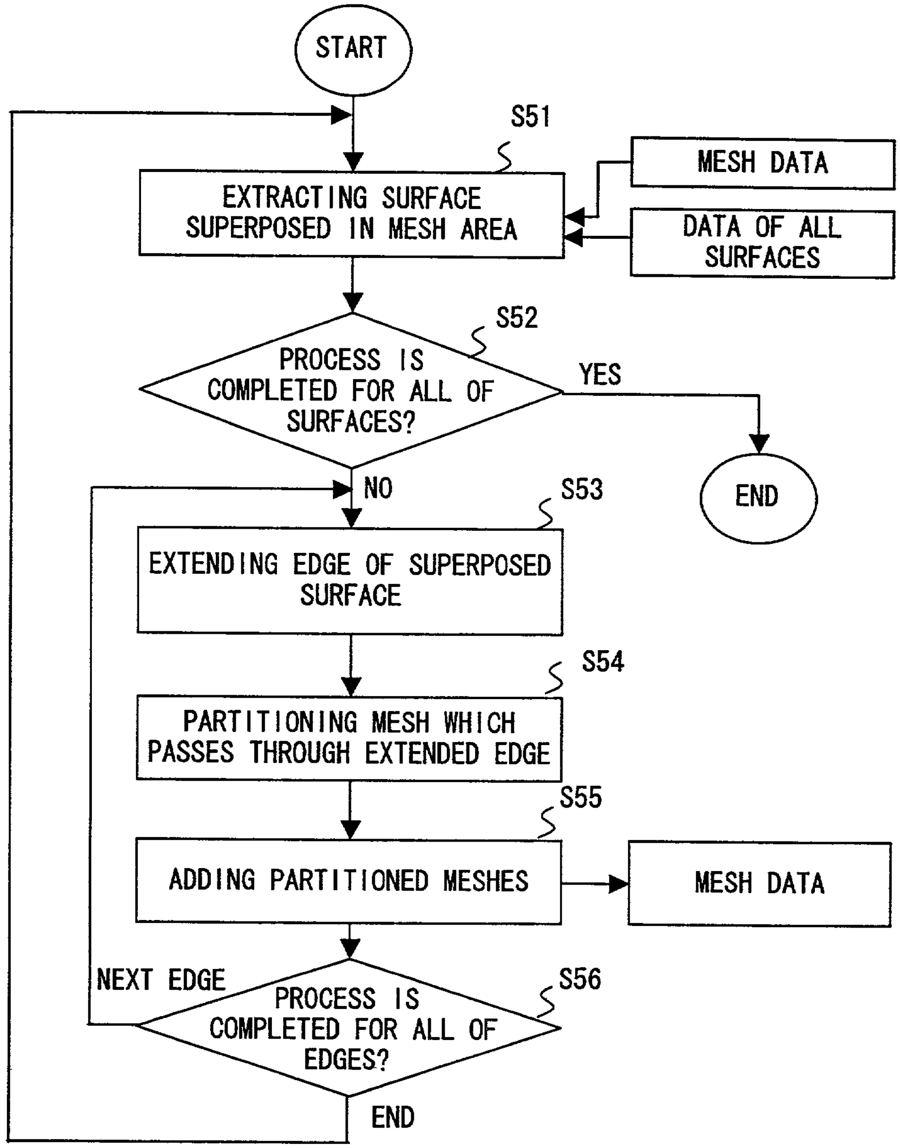


FIG. 33


START
S51
EXTRACTING SURFACE SUPERPOSED IN MESH AREA
MESH DATA
DATA OF ALL SURFACES
S52
PROCESS IS COMPLETED FOR ALL OF SURFACES?
YES
END
NO
S53
EXTENDING EDGE OF SUPERPOSED SURFACE
S54
PARTITIONING MESH WHICH PASSES THROUGH EXTENDED EDGE
S55
ADDING PARTITIONED MESHES
MESH DATA
NEXT EDGE
S56
PROCESS IS COMPLETED FOR ALL OF EDGES?
END

F I G. 3 4

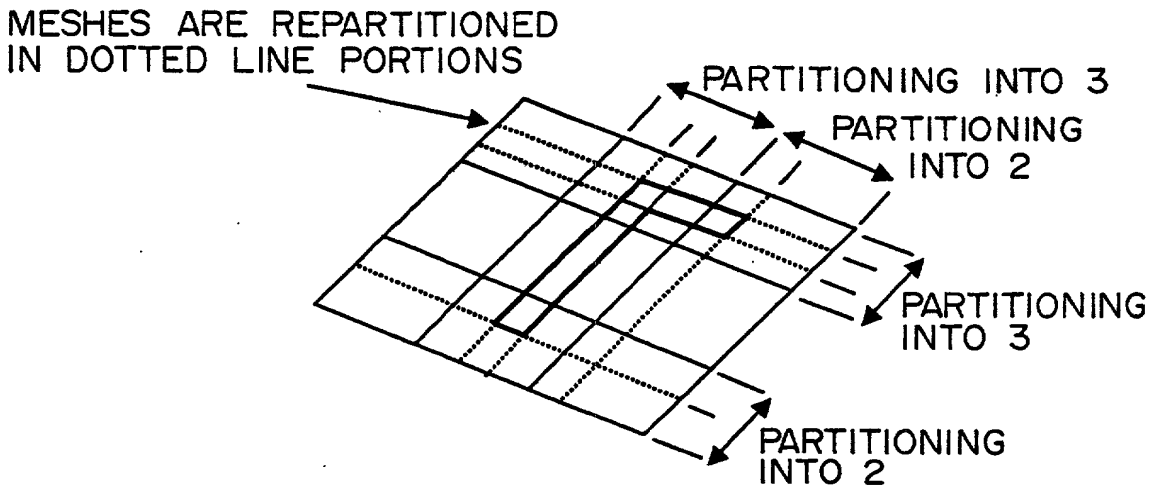
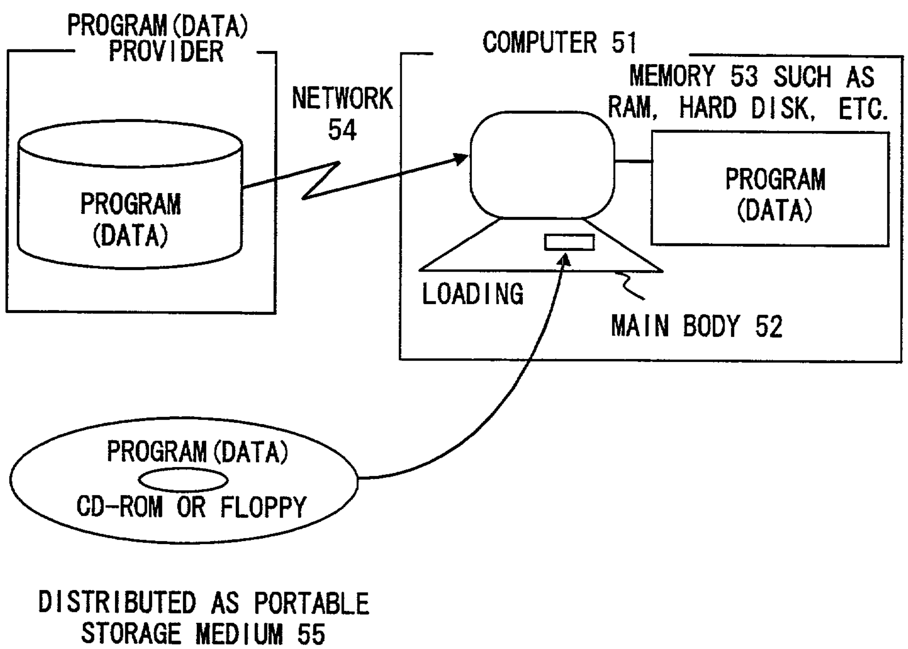

MESHES ARE REPARTITIONED
IN DOTTED LINE PORTIONS
PARTITIONING INTO 3
PARTITIONING
INTO 2
PARTITIONING
INTO 3
PARTITIONING
INTO 2

FIG. 35


PROGRAM (DATA)
PROVIDER
PROGRAM
(DATA)
NETWORK
54
COMPUTER 51
MEMORY 53 SUCH AS
RAM, HARD DISK, ETC.
PROGRAM
(DATA)
LOADING
MAIN BODY 52
PROGRAM (DATA)
CD-ROM OR FLOPPY
DISTRIBUTED AS PORTABLE
STORAGE MEDIUM 55

F I G. 3 6